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Storage Facilities and Expansion Panel

Natural Gas Market Outlook

2006 – 2016

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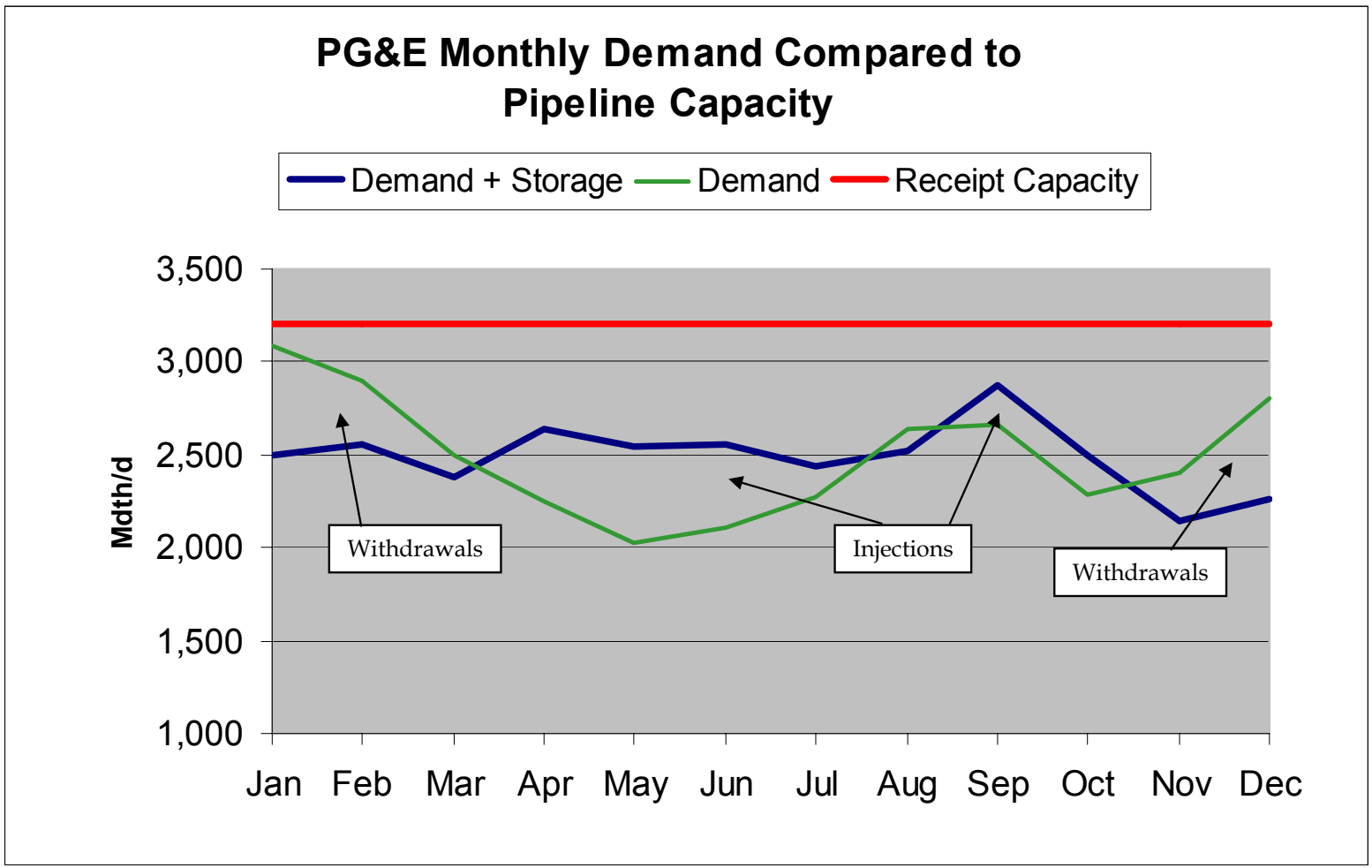
Storage and peak shaving

- Storage helps shave peak demand and reduces backbone and interstate usage during the winter
- There is a practical limit to the amount of storage capacity that can be used to offset the need for pipeline capacity and to avoid high winter prices.
  - ⇨ Storage injections combined with summer loads eventually constrain the backbone system and cause prices to rise.
  - ⇨ Practical limit is a function of slack capacity requirements.

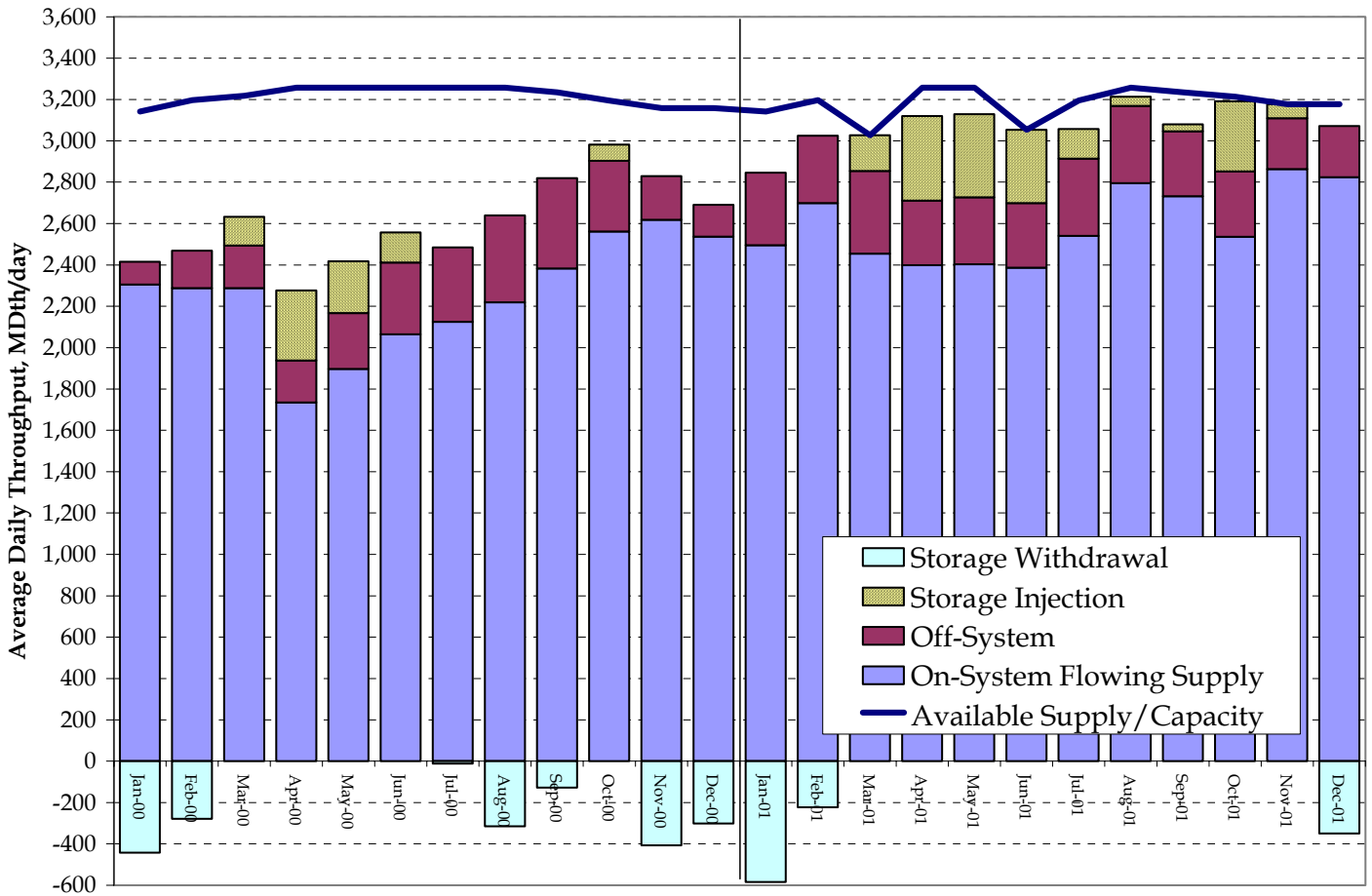
Storage can shave load peaks, up to a limit



Storage can only partially mitigate Dry Hydro year conditions

- In a dry hydro year, storage can only provide some additional supplies since the effects of a dry year are most pronounced during the injection season
- In a dry hydro year storage inventories may not get filled, which may lead to price impacts the following winter
- Additional storage does not mitigate the need for slack pipeline capacity

CGT Near Maximum Capacity in 2001 due largely to dry hydro year



Winter Reliability

- Core customers should be required to hold more storage to insure that they have reliable peak-day supplies
  - ⇨ There is no guarantee that storage will be available on peak days if Core customers do not hold storage capacity.
  - ⇨ Storage gas might be used (or not injected) in a dry hydro year or during price spikes prior to winter.
  - ⇨ There is a societal benefit of Core holding more storage rather than interrupting Industrial and Electric Generation customers during peak day events (winter price relief, lower electric dispatch prices)
- PG&E believes a 1-in-10 winter reliability criteria provides adequate protection at a reasonable cost

Storage Access Issues

- Storage connected to the LDC backbone systems and are long distances from load centers may not always supplement system supplies.
- Such storage may provide a substitute for flowing supplies depending on the availability of backbone capacity.
- To assure that these storage fields are supplemental supply sources would require expansion of the backbone system.
- Storage and pipeline capacity planning need to be integrated to ensure least cost planning.